

Title: Method of DNA Shuffling with Polynucleotides Produced by Blocking or Interrupting a Synthesis or

Amplification Process Serial No.: 09/214,645 Docket No.: DIV-1220-2

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POOL OF SELECTED SEQUENCES POOL OF SELECTED SEQUENCES SELECT SELECT **ERROR-PRONE PCR** SHUFFLING POOL OF SELECTED SEQUENCES

FIG. 1



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## SEXUAL PCR

3. RECOMBINATION AND REASSEMBLY OCCUR	IN PCR MACHINE		GTAAGAAAC		
2. GENERATE RANDOM SIZED FRAGMENTS OF DNA	A TA AA AAAA		AAAA AAA AC	AA AAA AA	G AAA AAAAA
SELECTED MUTANTS	ATAAAAAA	AAAAGAAAA	AAAAAAAC	GAAAAAAAA	

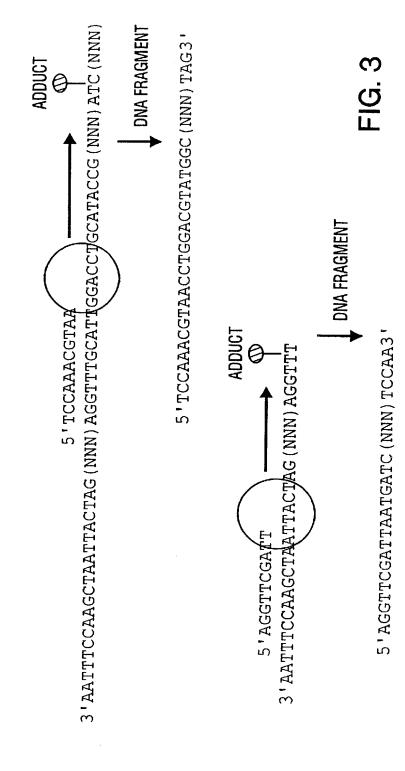
FIG. 2



**DNA ADDUCTS FOR SEXUAL PCR** 

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## DNA ADDUCTS

Aristolochic acid 1

2-Amino-1-methyl-6-phenylimidazo(4,5-b)pyridine 2-Amino-3-methylimidazo(4,5-f) quinoiline N-hydroxy-4'-flouro-4acetylaminobiphenyl (+)-CC-1065 (from Streptomyces zelensis) 7-bromomethylbenz(a)anthracene benzo(a)pyrene diolepoxide 2-bromoacrolein (2BA) Aristolochic acid 2 trivalent chromium aromatic amines benzo(a)pyrene camptothecin platinum(II) Mitomycin C

FIG. 4



**CREATING DNA ADDUCTS USING U.V. LIGHT** 

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5'AGATTAAGGAGTCCGTAAGGATT3 13'AGGCAT5 က

5'AGATTAAGGAĞTCCGTAAGGATT3 - 3'CCTAA5'

5'AGATTAAGGAGTCCGTAAGGATT3 - 3'CTCAG5'

3'AGGCATTCCTAA5 3'TCTAATTCCTCAGGCAT5'

3'AATTCCTCAG5'

5'AGATTAAGGAGTCCGTAAGGATT3 5'AGATTAAGGAGTCCGTAAGGATT3 5'AGATTAAGGAGTCCGTAAGGATT3 5'AGATTAAGGAGTCCGTAAGGATT3 5'AGATTAAGGAGTCCGTAAGGATT3 5'AGATTAAGGAGTCCGTAAGGATT3



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## Reassembly of DNA fragments

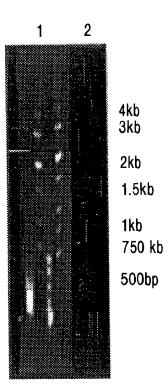


FIG. 6A

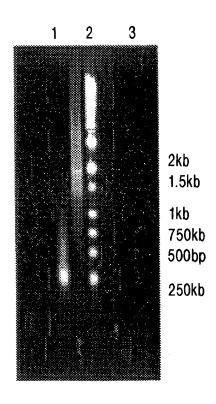


FIG. 6B